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President's Perspective

SINCE OUR INCEPTION, I would venture to guess that we have had nearly a million modelers join us as AMA members. We have enjoyed a long and diverse history, which has resulted in many hours of happiness, relaxation, and launched several careers in aviation!

Throughout the years, modelers have stepped up to the plate to volunteer in so many ways to promote aviation by working with our youth and raising hundreds of thousands of dollars for charitable organizations. We were born in the Golden Age of Aviation and have had the staying power to be the unequaled, nationally recognized leader of this great hobby.

Your AMA is the collective voice for American aeromodeling for all stakeholders in the hobby and industry which has grown to be in excess of \$1 billion annually.

While we celebrate an illustrious past, we exist today to ensure a healthy and productive future. The AMA looks to the future by providing a membership value proposition that has never been stronger as we source and protect flying fields and intensely advocate for freedom from federal regulations.

We have placed a highly respected man in the position to lead our talented staff and I am confident our next 75 years will far exceed our imagination. *MA*

—Mark Smith
AMA Executive Vice President

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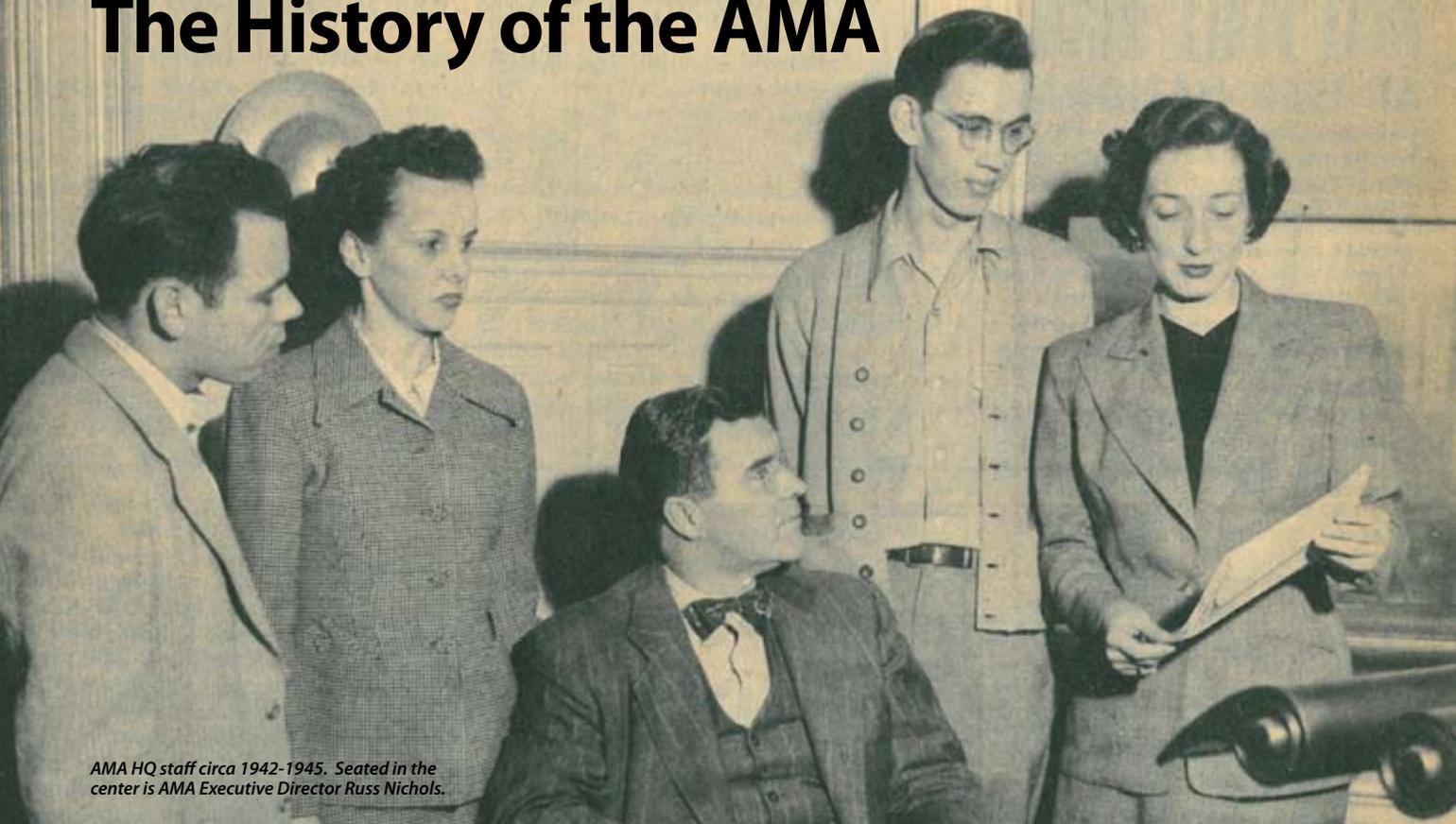
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The History of the AMA



AMA HQ staff circa 1942-1945. Seated in the center is AMA Executive Director Russ Nichols.

SEVENTY-FIVE YEARS. For a human it marks the golden years of life, but for a company or an organization, especially in light of ever-changing technologies and environments, it represents a major accomplishment. In today's world it is becoming rare to see slogans such as "100 years in business," or "founded in 1870." In fact, just the other day, I saw a sign that said "founded in 1996." What does that say about longevity and a devoted clientele? For the Academy of Model Aeronautics (AMA), what does it mean to celebrate the 75th anniversary? From where have we come and where are we going?

Almost as soon as there were aeromodelers there were attempts to form a national organization. In 1910 the National Model Aero Club was formed to "promote the study of the problems of aeronautics as demonstrated by the model, to regulate and control all model contests in the United

States, to promote exhibitions and contests and to secure the dissemination of the latest ideas and discoveries in the problem of flight as presented by models of either heavier or lighter than air models." (*Flying Machine Models, Aircraft magazine, May 1910.*)

Other similar groups emerged during the 1920s and '30s, such as the Airplane Model League of America, the McFadden Sky Cadets, the Jimmie Allen Flying Club, the Junior Birdman, and the Junior Aviators. All of these groups had hundreds of thousands of members and many even hosted their own national championships; however, none of the parent groups were capable of sustaining the organizations.

By the 1930s, events began to threaten the hobby while new technologies offered the chance to revolutionize it.

- The National Aeromodeling Championships (Nats), first held by the

National Aeronautic Association (NAA) in 1923, were struggling each year to exist.

- Small, gas-powered model airplane engines were being manufactured, but a movement to outlaw them was in full swing. In 1937, Connecticut and Massachusetts banned the flying of gas models. Massachusetts stipulated "that no gas model may be flown unless licensed, nor may it be flown by anyone unless that person is a licensed pilot." (*Model Airplane News magazine, October 1937.*) The US Department of Commerce also considered a potential national ban.
- Radio Control was beginning to grab modelers' attention, with articles appearing in various magazines and an official event appearing on the Nats schedule in 1936 (although no one participated).

The AMA logo has evolved in the past 75 years. While certain elements within the logo have changed, the torch of knowledge and the wings have remained a consistent symbol of the organization.



The blue logo on the left has primarily been in use since 1985, with only minor changes and varying tag lines. The white oval logo immediately to the right was designed during AMA's inaugural year, 1936. The red oval logo was introduced in 1940 and remained until 1949. From 1950 to 1985, the AMA logo shed its oval as the wings became more pronounced.

- News of models flown round-the-pole, tethered, whipped, or U-Control circulated as Max Sampson, Oba St. Clair, the Stanzel Brothers, and Jim Walker experimented with this form of control.
- The NAA tried to rejuvenate the nation's interest in aviation through the "Make America 'First in the Air' Campaign." It was noted that "proper appreciation of the importance of aviation in our national safety, return of the major air records to the United States, development of the interest of the nation's youth in model plane building and in model flying meets, and sponsorship of both local and national competitions ... were referred to frequently as the major activities requiring immediate attention." (*NAA Junior Membership News, Model Airplane News*, August 1935.).

In October of 1933 the NAA, and in particular Lt. H.W. Alden, NAA Model Airplane Committee Chairman, and William Enyart, NAA Contest Committee Chairman, decided to take the first step in creating a national aeromodeling organization by revitalizing the NAA Junior Membership.

Alden, noted by many as the main driving force, began contacting leaders in the aeromodeling field to develop an aeromodeling advisory group for the NAA. Aeromodelers, given all the changes

occurring in the hobby, realized they needed to work together and were willing to lend a hand.

Discussions were held during the 1934 Nats and more concrete plans were settled on during the 1935 Nats. The new Model Plane Council NAA Chapter was the "American Academy of Model Aeronautics (AAMA)," and its purpose "to advance model aeronautics as a science and sport and to aid constructive activities employing model aircraft as one means toward general aeronautic education." (*NAA Junior Membership News, Model Airplane News*, October 1935.).

The charter group included Capt. Willis C. Brown, Carl Goldberg, Gordon Light, Charles Tlush, John Stokes, Percy Pierce, Nathan Polk, Frank Zaic, Charles Grant, Bruno Marchi, Bill Brown, and Bert Pond.

At the 1936 Detroit Nats the first issue of *Model Aviation* introduced the new council to the aeromodeling community. The AAMA was to "consist of sincere builders and flyers, club directors, sponsors and patrons of the sport" and was to "act as a council to direct and supervise the contest and research activities of the many expert model flyers." (*Model Aviation* magazine, 1936, Volume 1, Number 1, page 3.)

During the annual technical meeting at the conclusion of the Nats, a provisional council and executive officers were approved and the membership requirements were outlined. Dues for those older than 21: \$3, younger than 21: \$1.50. In July 1937 the name was changed

to the Academy of Model Aeronautics.

One of the first issues addressed by the new AMA was the problem with gas model airplanes. In concert with *Model Airplane News*, the International Gas Model Airplane Association, the AMA and the NAA met with the U.S. Department of Commerce.

Safety Rules were proposed, plus it was highlighted that there had not been any accidents between full-scale and gas model aircraft. The conference ended with the Department of Commerce not only refusing to ban gas models but issuing a statement of endorsement, setting out aeromodeling's value to youth.

With that battle won the NAA-AMA joined the Model Aircraft Commission of the Fédération Aéronautique (FAI), becoming the only body in the United States with the authority to represent aeromodelers worldwide.

The AMA took over responsibility for the Nats in 1938 and in 1940 the NAA leadership transferred authority of its model division. NAA announced, "It is acknowledged that model aviation in the United States has come of age, and that aeromodeling enthusiasts are at last charged with the conduct and supervision of official American model aviation activities." (*Model Airplane News*, April 1940.)

By 1941 membership had reached 12,000 and the AMA districts were established. In 1942 Russ Nichols became executive director, a post he would hold until 1963, and began additional improvements. Control Line (CL) models (G-Line, Tether, or U-Control) were



Inside AMA HQ
in the Willard Hotel

At left is Bruno Marchi, AMA's first Technical Director. Center is Madelaine Gaisser. At right is Al Lewis, AMA President (1938), Secretary-Treasurer (1939-1942), and Executive Director (1945-1946).



Scan to read more about the history of the AMA logo.



Trenton NJ, Senior NAA bus in route to 1938 Nats, the same year the AMA took over responsibility for the event.

officially recognized and these fliers were encouraged to participate in forming national rules.

With the outbreak of World War II the Nats were canceled from 1942 to 1945 and the election of AMA's national officers, previously held at the Nats, was for the first time held via mail ballot.

The 1946 "Victory Nationals," welcomed home modelers to the first Nats to feature Free Flight (FF), CL, and Radio Control (RC) events. Through a donation by the model industry all AMA members received *Model Aviation* magazine.

By 1947, the AMA's RC Committee, led by Dr. Walt Good, was able to work with the Federal Communications Commission (FCC) to open a single channel on the citizens band (27.255MHz) for RC flying. Radio operator's licenses were no longer required, as long as FCC-approved equipment was used.

In 1948 the U.S. Navy agreed to host its first Nats, beginning a relationship that would last until 1972, and be fondly remembered by all who attended.

Irwin Olson, Keith Storey, Claude McCullough, Frank Ehling, and Good helped carry the AMA through the 1940s and '50s and introduced new benefits including full-time legal liability coverage as part of an AMA member's regular license fee (as long as models were built and flown in accordance with AMA safety code).

Model Aviation was also mailed to all AMA members, not just leader members, clubs, and subscribers. Under their leadership and with the introduction of CL aeromodeling, membership reached 21,293 in 1958.

John Worth, first as AMA president in 1963 and then as executive director from 1964-1986, along with Maynard Hill, Cliff Weirick, John E. Clemmens, and John

Grigg, would lead the AMA for the next several decades. During the 1960s the AMA became incorporated independent of the NAA, and through continued work with the FCC, five frequencies in the Class C citizens band were reserved for modelers.

In 1966, in search of ways to reduce costs and increase members, the AMA Executive Council agreed to provide all members with a subscription to *American Aircraft Modeler (AAM)* rather than continue *Model Aviation*. They hoped that by publishing in a separate magazine, AMA members would still receive their AMA news, but also read exciting modeling feature articles. They also hoped that more modelers would be exposed to AMA and become members. The membership grew to 52,000 from 16,000 between 1966 and 1975.

By the 1970s RC model aircraft, including the newly developed RC helicopters, replaced CL models as the most popular form of model aviation. The last Navy Nats was held at Glenview Naval Air Station in Illinois in 1972. AMA took over full responsibility for the Nats, and in an effort to duplicate the Navy's shifting of the event around the county, the AMA visited 27 different cities through the early 1990s.

Membership continued to rise with the 50,000th member, Robert Lockwood, joining in 1974. Following the bankruptcy of AAM,

the AMA Executive Council decided to resurrect *Model Aviation* magazine in 1975. Under the leadership of Bill Winter and Carl Wheely, members were introduced to a new *Model Aviation*, one that is now AMA's flagship publication.

As the 1970s drew to a close, the AMA purchased slightly more than an acre of land in Reston, Virginia, for a new Headquarters and museum. A building fund was established and by 1982, individuals such as Leon Shulman, clubs such as the Toledo Weak Signals, and industry donors including Frank Garcher with Midwest Models, Sullivan Products, Top Flite, and Goldberg Models had surpassed the goal of \$160,000. On September 24, 1983, a ribbon-cutting ceremony was held for the 3,000-square-foot, two-story building.

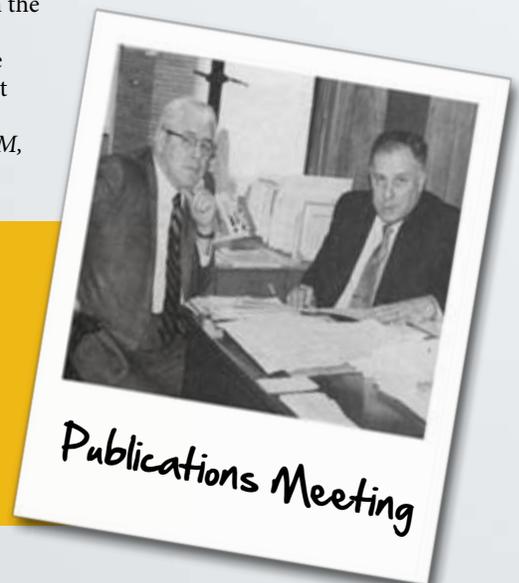
In 1985 the 100,000th member, Corbert J. Chaisson, joined the AMA and the following year the AMA celebrated its 50th anniversary.

It became apparent that additional RC frequencies would be needed. With the leadership of Bob Aberle, the Frequency Committee negotiated with the FCC for the rights to 50 RC channels, awarded in January 1983. In 1992, AMA members successfully defended these frequencies with a successful letter-writing campaign to the FCC.

With increasing concern over the loss of flying sites and increasing costs associated with traveling Nats, the AMA Executive Council formed a search committee in 1988 to locate a site for a new headquarters and national flying site. After reviewing more than 50 proposals, the Midwest was selected and in 1990 land was purchased in Muncie, Indiana.

In 1992, the new flying site hosted a grand opening, and the National Model Aviation Museum opened its doors in 1994. In 1995 the site's official name became the International Aeromodeling Center (IAC), and by 1996 AMA was in

Bill Winters, *Model Aviation* editor, and John Worth, AMA Executive Director, conferring during the mid-1970s on expanding the publication.



A rare photo of the AMA staff at the home offices in Reston VA. Front Row, third from the right is Joyce Hager, currently AMA's most tenured staff member.



a position to host its 60th anniversary, the first “Celebration of Eagles,” followed by the first complete outdoor Nats in Muncie.

The International Aeromodeling Center was improved with the addition of paved and grass runways, additional CL circles, paved roads, camping, and restrooms/showers. In 2001 a new AMA Headquarters building officially opened and the majority of the AMA's staff relocated across the drive. The space vacated in the museum building was quickly occupied by museum storage, additional exhibits, a museum theater, AMA Custom Products, and the AMA's model airplane Plans Service. The museum's Claude McCullough Education facility was completed in 2010.

The 1990s and 2000s saw the AMA address a number of major member concerns, foremost of which was the loss of flying sites. Sound, a major reason for these losses, was addressed by Howard Crispin in his ongoing *Sound and Model Aeronautics* articles in *Model Aviation* and the book of the same title.

In 1998, in an effort to further support flying site retention, the AMA created the position of Flying Site Assistance Coordinator and later developed the Flying Site Assistance Kit. Filled initially by Joe Beshar, and then assisted by Wes DeCou (representing the Western U.S.), the coordinators' regular “Flying Site Assistance” columns in *Model Aviation* featured information about key partnerships with groups such as the National Air Traffic Controllers Association, U.S. Fish and Wildlife Service and U.S. Department of the Interior.

It also highlighted when AMA representatives testified before the federal government and the signing of the Memorandum of Understanding between the AMA and the Environmental Protection Agency concerning Superfund Sites, which are landfills that have been closed and are available for alternative uses.

Another area to be addressed was

improved communication. Originally print-based with *Model Aviation* magazine and newsletters such as the museum's *Cloud 9* and the *National Newsletter*, in the mid-1990s the AMA began moving toward online communication on its website: www.modelaircraft.org. Today online projects include emailed newsletters (*AMA Today* and the *AMA Insider*), an online e-zine *Sport Aviator* (<http://masportaviator.com>), and social media (Twitter, Facebook, and YouTube).

Updated publications such as the *NatsNews*, now available both in print form and on the Web, and new publications such as *Park Pilot*, are further improving the distribution of valuable information.

In 1970, thanks to a large contribution from Matty Sullivan, plus money allocated from the AMA budget, a scholarship program was initiated and to date 236 scholarships totaling more than \$758,000 have been awarded. In 1998 the Radio Controlled Hobby Trade Association made a generous contribution to help fund AMA's educational programs.

Education Committee activities have included regular attendance at the National Science Teachers Association Convention, work with the National Coalition for Aviation Education, Civil Air Patrol, Science Olympiad, NASA, Smithsonian National Air and Space Museum, the Children's Museum of Indianapolis, and the development of the Inventing Flight and AeroLab curriculums. The AMA's Youth Education Stipend Grant (YES), and now the Take-off-And-Grow (TAG) program are additional incentives

developed to help clubs educate and promote aeromodeling.

The museum continues to collect items that document the history of aeromodeling. In 1996 Norm Rosenstock, as AMA historian, began to collect biographies of modelers. Today the museum has nearly 800 such stories posted online, plus more than 640 research files have been started for future biographies. The histories of 15 model airplane clubs, eight aeromodeling manufacturers, and six model aviation Special Interest Groups have also been collected.

The last two decades have witnessed many new technological advances that will significantly affect the future of aeromodeling including the introduction of the turbine engine, spread spectrum radio technology, and electric-

powered aircraft. Both have the potential to open or reopen flying fields across the country to aeromodelers who have been forced from flying fields because of sound.

AMA is currently working with the U.S. Department of Homeland Security and the Federal Aviation Administration to ensure aeromodeling can be enjoyed long into the future.

Seventy-five years: a chance to reminisce and look toward exciting opportunities to come. It has been a long and arduous adventure, full of ups and downs, but thanks to a long list of dedicated and devoted individuals, both modelers and industry leaders, the organization has survived and continues to be “of, by, and for the modeler.” MA

—Michael Smith
National Model Aviation Museum Director



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All of us at DU-BRO Products are proud of providing our quality hardware, accessories and tools to the modeling community for over 50 years. However, our success could not have been possible without the diligent efforts of the AMA and their service to the model aircraft industry. It is with our deepest sincerity and gratitude that we offer our congratulations to the AMA staff and volunteers for their work in maintaining and promoting this great hobby for 75 years!



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National Aeromodeling Championships

AM I THE BEST? For those aeromodelers who ask themselves this question, competition is the key. Facing an opponent, and besting him or her is the only true way to know.

Aeromodeling contests began almost as soon as two people could fly a model airplane. In the early days competitions were regional affairs with exchange clubs, parks, business, and Young Men's Christian Associations sponsoring many events.

This changed in 1915 when the Aero Club of America sponsored the first national aeromodeling contest. (1) The contest was divided into three separate events: distance – launching from hand, duration – launching from water; and duration – launching from ground. Cash prizes were awarded to the individuals achieving the best scores each month and the Henry S. Villard Trophy was awarded to the club with members who had the highest collective scores. (2)

The Illinois Model Aero Club (IMAC) won the three years it was awarded, retaining the cup in 1919, and ending the only national aeromodeling event.

The IMAC recognized the need for a national event and encouraged the National Aeronautic Association (NAA) to hold an aeromodeling event. In 1923 Bernard Mulvihill, vice president of the NAA, agreed to offer prize money and a trophy if the St. Louis Air Board and the Air Race Contest Committee added the event to the schedule. After much work, Event No. 6, Mulvihill Trophy Duration Race for Model Airplanes was added to the National Air Race Program. (3)

For the next few years, it was a matter of who would sponsor the event as numerous groups came and went including the Playground and Recreation Association, the American Association of Model Aero Clubs with the First National Indoor Model Airplane Contest (4), and the Airplane Model League of America (AMLA).

When the Great Depression hit, the Nats seemed done for, but again interested modelers prevailed. With the leadership of Lt. H.W. Alden, chairman of the NAA Model Airplane Committee and financing from *Model Airplane News* magazine the Nats survived. (5) Radio control joined free flight in 1937 and following a brief halt during World War II, the "Victory" Nats were back in 1946 with almost 1,000 contestants flying in 23 events including Control Line.

For many contestants it was the Navy Nats, held from 1948-1972, that represented the glory years of the event. Each summer a different Naval Air station would host the grand event providing food, housing, manpower, and the most importantly; the great building hangars, with hundreds of tables set up for 24-hour repairs.

In 1973 the AMA took over

responsibility for the entire Nats, and with the help of numerous groups and sponsors, put the show on the road. For the next 23 years, the Nats would stop in 16 cities across the country. Finally in 1996 the outdoor Nats found a home at the AMA's International Aeromodeling Center and the indoor events landed at the Mini-Dome in Johnson City, Tennessee. For the last 16 years, aeromodelers from around the world have gathered at these sites to continue the quest to see who is, indeed, the best.

MA

—Michael Smith
National Model Aviation Museum Director

Sources

1. *Flying*, p631, August 1915
2. *Flying*, p29, February 1916
3. International Air Meet program, 1923
4. *Detroit Educational Bulletin*, Volume 10, No. 6, February 1927
5. *Model Airplane News*, July, 1933

Nats Construction Hangar, 1969





The National Model Aviation Museum as seen today at the International Aeromodeling Center in Muncie. Scan the code above to visit the museum's website.

Model Aviation's Time Capsule

WHEN THE Academy of Model Aeronautics Model Museum first opened to the public on September 24, 1983, it occupied the two-story center lobby space of the AMA Headquarters in Reston, Virginia. The model airplanes were displayed on mobiles hung from the ceiling and on folding tables. Modeling supplies, such as engines and radio equipment, and memorabilia such as patches and T-shirts, were displayed in glass cases that circled the center space.

The idea to display models and related objects had been suggested as early as 1946, but the project was stalled until AMA Executive President John Worth began corresponding with well-known modelers and discussing the possibility of donating items to the AMA. Although there were hints in the correspondence that items may actually have been donated

earlier, the first official recorded donation was from Dr. Walt Good in February of 1978.

The collection quickly grew in the 1980s thanks to Curator Hurst Bowers, who convinced well-known modelers such as Joseph Kovel, Ed Packard, and George Clapp to donate items to the museum. Soon, the collection was growing so quickly it could not be contained in its designated space.

The move to Muncie, Indiana in 1992 meant that the museum had to be packed and shipped by truck to Indiana from Virginia. After unpacking the collection from the shipping containers and creating exhibits in the new space, the museum was again opened in 1994, along with the new Headquarters in the same building. The museum was then formally named the National Model Aviation Museum.



Unpacking in the new building in Muncie.

With roughly 7,000-square feet of gallery space, the exhibits varied from a recreation of a 1950s model hobby shop to models hanging from the ceiling, and window cases dedicated to various kit manufacturers.

During the 1990s, museum staff members focused on adding to the exhibits by collecting new models and memorabilia. Again, the museum collection outgrew its space.

In 2001, the AMA built a new Headquarters building on the property. The museum remained in the same location, nearly filling its building with the archives.

Curator-turned-Director Michael Smith has focused on improving the care given to the donations to ensure that they will last for multiple generations to see and enjoy. Work on the exhibits is continuous, and there are plans in motion to expand the hands-on exhibits and add multimedia presentations within the next year.

To help determine the museum's future, a consultant has been hired to assist in writing a long-term plan. No matter what the future holds, the museum will always be here to keep the stories of model aviation flying. *MA*

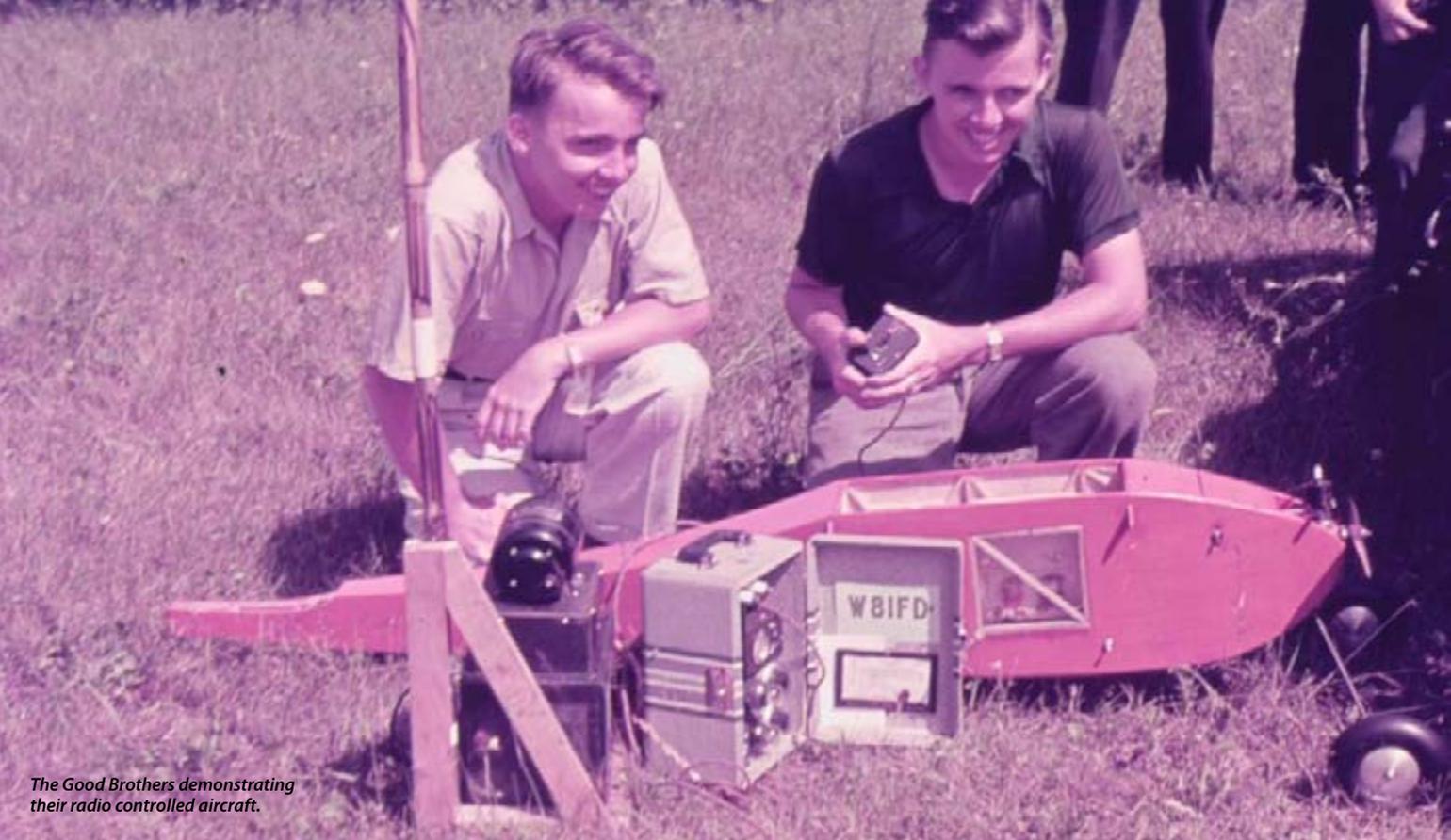
—Maria VanVreede
Museum Registrar



A good spot to view the museum collections in the Reston building was from the second floor balcony. The view offered a great look at the hanging models and other displays.



When the museum first opened in Muncie in 1994, it was incomplete. If you look closely in this picture, the cases set into the walls are empty. It is unclear when these were finished, but they currently display artifacts related to kit manufacturers.



The Good Brothers demonstrating their radio controlled aircraft.

A Brief History of Radio Control

WHEN I was just a small boy, I flew my rubber-powered Sleek Streak in the street in front of my house. I dreamed of somehow controlling it to keep it out of the trees and off the surrounding homes. I believe this same desire drove those who contributed to the design of radio control systems that began as very simple and evolved into the sophisticated designs we enjoy today.

Dr. Walt Good was, to say the least, one of the giants of RC history. Walt, along with his brother William, is credited with making the first radio-controlled (RC) flight. The model they used, the “Big Guff,” is at the Smithsonian in Washington, D.C. There is also a model at the National Model Aviation Museum in Muncie, Indiana.

In the beginning, RC was not very reliable and was not anything like what we enjoy today! The first systems controlled the rudder only. These systems were very large and heavy and required a huge ground-based antenna to transmit signals to the receiver onboard the airplane. Such early systems were known as “relay-less reeds.” The first designs may have come from Louis Scheel and Oliver Tremac in 1959, and the first commercial manufacturer was likely the Bonner Transmite.

The signal transmitters were not proportional, but rather full-travel signals, resulting in the rudder turning either full-

left, full-right, or neutral. For the most part, these systems required very large Free Flight models. Many airplanes had wingspans of 6 feet or more to support the electronics and batteries required for operation.

In the late 1960s, Kraft systems introduced the multichannel proportional system. A pilot could now move the sticks and have the controls follow the movement, just as in a full-scale airplane! Finally modelers could fully control a model airplane. Along with Kraft, other companies such as Pro-Line, Orbit, EK, and World Engines sold the new system. As time went by, systems improved greatly in reliability and function.

When servo reversing came onboard, it was a great time saver for the modeler! No longer did one have to plan a radio installation so precisely. Now modelers could simply flip a switch to remedy a reverse-control situation.

American manufacturers, such as Kraft Systems and Pro-Line brought dual rates, endpoint adjustments, and slow-roll buttons to the market. The companies even introduced exponential to the world’s competition fliers.

Virtually all of the future innovations were a direct result of competition modelers wanting more control. Coverage of competitions was the main goal of the model magazines of the time. Everyone

wanted to know what Phil Kraft, Ron Chidgey, and Rhett Miller were using, flying, and winning with.

In the 1970s the first influence of Japanese systems penetrated the US market. Futaba and JR came onto the scene with reduced-price systems that caught the attention of American modelers. The pressure of these companies eventually spelled the end of US manufacturers in the radio market.

Futaba and JR increased productions and quickly brought more innovations to the modeler. As time went on, more companies joined the market.

During this time, the AMA was involved in procuring frequencies for modelers to use. We were blessed with obtaining 72 and 75 MHz for model use only. This was the result of many years of work by a number of individuals on the AMA Frequency Committee. We owe so much to them!

As time continues to march on, we see new things! 2.4 GHz spread spectrum equipment has brought a new excitement to RC that nearly everyone enjoys today. We eagerly await future advancements by RC manufacturers. The manufacturers’ desire to improve the control on our models is much the same as our RC pioneers.

Thanks for all the fun, Mr. Good! *MA*

—Tony Stillman
AMA Flying Site Assistance Coordinator

75 Years of Model Engine History

IN THE BEGINNING, there were working model engines such as the Atom and Arden .049 gas-ignition engines. We call them model engines because they were used in models, but it is more accurate to call them miniature engines! These power plants were engineering marvels in their own right.

To have an engine that small with a full ignition system was quite a feat when you consider the technology and materials that were available. They used big batteries, coil ignition, and capacitors with mechanical points to make the plug spark.

More powerful gas/ignition engines, such as the Foster Brothers .99 with dual-ignition speeds, soon came along. These were used in Free Flight airplanes and fueled the imaginations of many a small child and some of our future astronauts. The hobby of model aviation owes a lot to the inventors and advanced rapidly once miniature internal combustion was available.

A gasoline/oil mix was the main fuel being used until innovators such as Ray Anderson took out the spark plug and brought us the glow plug. These engines used the less-volatile methanol-and-oil mixture. The glow-plug engine immediately had a huge advantage, because once the engine was running, all of the batteries and wires could be removed. This saved much weight in the airplane.

Initially, engines were only required to run at a fixed speed and then quit. Airplanes were either Free Flight or tethered, as in Control Line (U-Control). The engines were just required to run at full bore until they ran out of fuel or a timer cut off the fuel supply. Amazingly so, these engines are still used today in their original form by many Old-Timer flying enthusiasts around the world.

When radio control systems became available, carburetors were added with throttle arms that allowed the operator to vary the engine speed. Now the flight of a full-size airplane could be faithfully and authentically reproduced. This led to an explosion in engine design and availability.

Added to this mix were some small diesel engines, but most people tended to run glow power. In

the 1980s a new development of glow-ignition, four-cycle engines reached the US market. These were initially quite small (.40 size) and were much less powerful than their two-cycle equivalents. They did however, sound great and were an inspiration for many scale warbirds.

The four-cycle model engine was an amazing piece of engineering and created quite a revolution in Scale and Aerobatic competitions. They had gears that drove cams, which lifted valve heads smaller than your little fingernail. Even with all of the extra moving parts, they were not much heavier than their equivalent two-cycle counterparts.

All of the types of engines began to increase in capacity as radio systems became more powerful. It could have been the other way around; either way this chicken-or-egg scenario led to the development of huge RC airplanes with wingspans greater than 140 inches.

Then a strange phenomenon occurred. Gas-ignition engines came full circle and bounced back with a bang! If you go to any big Scale or International Miniature Aircraft Association (IMAA) event you will see Desert Aircraft and RCS 50cc ignition engines alongside four-cylinder, horizontally opposed O.S. four-cycle engines. Alternatively, they could be next to a big O.S. BGX or Mark 2.1 two-cycle-powered airplane.

Today you can buy a 250cc, four-cylinder ignition engine and fly an RC airplane twice your own size! I wonder if those early miniature-engine pioneers dreamed this would be the case 75 years ago.

Innovations are still happening today. You can buy a miniature O.S. Wankel engine that has no piston! There are RCV four-cycle engines that have no valves. The cylinder-liner is supported by ball bearings and geared to rotate at half of the speed of the crankshaft. While this happens the piston goes up and down in the rotating cylinder. How creative is that? That's pretty amazing stuff by any engineering standards.

There is one engine that uses nearly all of the above technology. The YS 1.70 engine is a four-cycle, supercharged ignition engine that runs on nitro-based fuel. The top of the engine is a four-cycle; the bottom half has a rotary-timed rear inlet disk. The fuel is pumped by the inlet valve pushrod and the fuel/air mix is supercharged by the down stroke of the piston. The valve cover chamber is evacuated every stroke of the piston, which opens the inlet valve to stoke the combustion chamber.

Each time one of these incredible engines is run, it could be said that it represents the ghosts of all who invented and made what we use today.

There was a time when a chauffeur had to be a mechanic to drive a car. At one time you almost had to be a mechanical engineer to get these little engines to run. Today, in a car we just turn the key and go. In the world of RC internal-combustion flying, we are fortunate to have had much of the hard work done for us. **MA**

—Eric Henderson
Contributor

The O.S. in-line four-cylinder four-cycle that is almost too beautiful to run. It is even more beautiful when it does!





A Salute to Aeromodeling's Lindbergh

MANY HAVE SAID that if there was a Mount Rushmore for aeromodelers Maynard Hill would certainly be on it. He was one of a kind who passed away in June at age 85. Maynard will be sorely missed.

I had the distinct privilege of not only knowing him but also the honor of landing his TAM-5 RC aircraft on the coast of Ireland in August 2003. That airplane, designed by Maynard, had just spent 38 hours, 52 minutes, and 14 seconds, traveling 1,882 miles from Cape Spear, Newfoundland. It did what no other model aircraft had ever done. The TAM-5 crossed the Atlantic Ocean—on less than a gallon of fuel.

Only two ounces of Coleman Lantern fuel, slightly modified with a lubricant, remained in the tank. This fuel

was Maynard's solution for long-term engine runs that he developed during years of research. No one had ever flown a model a third of that distance before. It was a giant leap for modelers everywhere.

Maynard Hill has been hailed as “aeromodeling's Lindbergh,” and it's not much of a stretch. Crossing the Atlantic was another world record, his last, for an aeromodeler who has few peers at this level.

Maynard's records were in speed, altitude, and distance. Closed-course and cross-country records, powered flights or gliders—no record was safe from Maynard Hill.

Although Maynard accumulated 25 world records between 1963 and that day in 2003, he was much more than a record-breaker. He was a great innovator and a metallurgical



January 2001. Maynard Hill's building workshop.
Photo by Barrett Joseph Foster.



July 2002. A strategy session in Maynard's building workshop. L-R – Russell Howey, his father Paul Howey, Joe Foster, Maynard Hill. Photo by Leroy Leslie Hamilton.



August 2002. Cape Spear, Newfoundland. Maynard Hill and Nelson Sherren wait for launch time. Photo by Leroy Leslie Hamilton.

scientist, but mostly a tinkerer who could solve nearly any problem. He was also one of the greatest storytellers I've ever encountered. He could enthrall you for hours.

I think he was to aeromodeling who Goddard was to rocketry. His "backyard laboratory" and basement workshop were places of reverence for all who were privileged to enter.

Maynard took the propellers from all his record-breaking airplanes and nailed them to his workshop door like scalps. The display was his chronology of world records.

Maynard focused on surpassing whatever was the best at the time, especially if it was a record held by the Russians during the Space Race of the 1960s! He quipped, "Communism is very bad—no balsa wood!"

Visiting his basement was such a thrill. Aside from his records, Maynard was absolutely driven to develop practical and usable new technologies. His electrostatic autopilot invention was an incredible feat and a great service to the hobby and sport.

Maynard was an early pioneer in the development of unmanned aerial vehicles, or drones, for the military, presaging what has become a key component in our war on terror today. Many such projects were funded by Pentagon grants while he worked at the Johns Hopkins Applied Physics Lab.

Inspired by heroes such as Jimmy Doolittle, Wiley Post, and Amelia Earhart, Maynard grew up in the Golden Age of Aviation. He often said that he had acquired a serious addiction to balsa and glue before he was 10 years old!

Although he was partially deaf and legally blind for the last 10 years of his life, Maynard Hill saw possibilities where others didn't. If aeromodelers of the present generation have the forethought and ability to push beyond boundaries, it's because they stand on the shoulders of a giant: my friend, Maynard Hill. MA

—Dave Brown
Contributor

Preserving Flying Sites

FROM ITS HUMBLE beginning, the Academy of Model Aeronautics (AMA) has grown in many areas to help modelers in the United States better enjoy their hobby. Standardizing competition rules created a level playing field for AMA members to be able to compete nationally.

When AMA began publishing *Model Aviation*, it provided a vehicle by which the Academy could better communicate with its members.

As AMA grew, it began to look for ways to better serve the membership. Surveys conducted by the Academy indicated that the number-one issue on modelers' minds was obtaining and retaining good, quality flying sites. Headquarters staff members did the best they could to help, but it soon became apparent that someone was needed to deal solely with this issue.

The Academy hired Joe Beshar and Wes De Cou to take on this responsibility. Joe handled issues east of the Mississippi River, and Wes took care of the western half of the country.

Although these two men had much success in helping clubs, the AMA found that most of these cases concerned clubs that had lost a site and needed assistance. The AMA Executive Council felt that many of these situations might have been avoided if the club had taken steps to avert the issues that lead to the loss of the field.

It appeared that part of the problem

was club members' lack of education concerning how they could actually protect their flying sites. It was also the Executive Council's feelings that the program needed more structure and better accountability to AMA Headquarters.

A book called *Getting and Keeping Flying Sites* had been developed throughout the years. Although it was effective, the document had become dated. There were also more than 100 other documents, many dating from the 1960s, that needed updating.

In 2009, the AMA decided to change the operation of the Flying Site Assistance Coordinators (FSAC) and have a single person who would be more directly tied to HQ. After a search, I was selected to take over the FSAC operations and make the program more proactive.

Since that time, the *Getting and Keeping Flying Sites* book has been revised; many of the documents have been revised, deleted, or replaced. Several videos, including a video of the seminar on *Getting and Keeping Flying Sites* was created and is available to the membership on the AMA website (www.modelaircraft.org) on the Flying Site Assistance page.

We have a Memorandum of Understanding with the Environmental Protection Agency (EPA) which simply states that once the EPA completes the remediation of a Superfund Site, it is recommended that a good use for it is to

allow AMA clubs to use it as a flying field. This has opened many doors to clubs; as a result, several new club sites have been created, and a search for new ones is in process.

We are working with the FAA to regain access to some sites that have been taken away because of a misunderstanding of FAA rules regarding model flying on active airports. Many clubs—especially several in California—have been impacted by this ruling. I am working with our Governmental and Regulatory Affairs representative, Rich Hanson, to get this resolved so any affected clubs can get access again to flying sites.

As I write this, 78 cases are open in the Flying Site Assistance files! The Academy is busier than ever assisting clubs in the quest to find new sites, as well as educating club members on how to better protect the sites they now enjoy. **MA**

—Tony Stillman
AMA Flying Site Assistance Coordinator



Model Aviation Pilots Group Shot
National Model Aviation Museum's Model
Airplane News collection.

Scan the code to the left to watch a video
about AMA's flying site program.





IAC Opens Doors

IN THE LATE 1980s, members of the Academy of Model Aeronautics (AMA) Executive Council made the boldest move in Academy history ... they decided to create the world's best flying site.

The concept was developed and a request for proposals was advertised. The Executive Council received more than 60 bids from communities throughout the United States. The proposals were narrowed down and the council chose Muncie, Indiana, as the location. The Muncie site included more than 1,200 acres of farmland.

The original plan was to begin construction of the AMA museum and a multipurpose flying site. The concept changed as it became clear that the AMA Headquarters operation would be more efficient and economical if it were moved from Reston, Virginia to Muncie. The museum building was designed to also house the Headquarters. By 1993, the museum, Headquarters, and flying site were all based in Muncie.

The original flying site was the L-pad, also known as Site 1. The design was intended to incorporate the needs of Control Line and Radio Control. In 1992 the Fédération Aéronautique Internationale (FAI) Scale World Championship was held at this site. The success of this event indicated that the International Aeromodeling Center fulfilled the Academy's dreams.

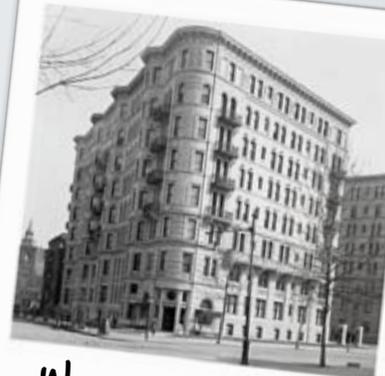
In 1994, the AMA Executive Council made another bold move by mandating that the National Aeromodeling Championships (Nats) be permanently held in Muncie. The Control Line speed circles and other features were created, and the 1995 Nats and Pylon World Championships were held in Muncie. The creation of Stage Center illustrated to the world how the ultimate Pylon site should be designed.

The growth of the Academy and its functions created the need for a larger and more functional Headquarters building. The concept and design of the current building were introduced in 1997. The dedication was held June 7, 2001.

Muncie could be considered the mecca for modelers throughout the world. Over the past decade many notable events have been held there, including world championships

in Control Line, Scale, Pylon, Pattern, and Electric. Almost every day of the year, modelers have fun at the site. *MA*

—Bob Brown
AMA Executive Council member



Washington D.C.
1942-1965

The AMA called many places home before moving to Muncie.

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Special Interest Groups (SIGs)

As the hobby and sport of model aviation continues to evolve, small communities of aviation pilots are joining together, united by a common passion. These Special Interest Groups provide an outlet for model aviators to communicate, share knowledge, learn new technologies, and compete within their particular field.

The following timeline pays tribute to the 23 AMA SIGs.

1967



The National Free Flight Society (NFFS) is committed to the preservation and promotion of FF model aviation in all of its aspects and manifestations.

The National Free Flight Society is the only organization in the United States that serves the interests of all FF categories. The Society was formed more than 30 years ago to promote FF activities and continues as a vital, growing organization dedicated to the advancement of the FF hobby and sport.

1960

The Model Engine Collectors Association (MECA) promotes the interests of model engine collecting as a recreational, educational, and historical recording activity.

MECA provides information, assistance, training, and fellowship, and acts as a governing body for the hobby involving the association's members.



1967



The Society of Antique Modelers (SAM) promotes the competition flying of FF and RC model aircraft of vintage design. The intention is to be casual, enjoyable, and interesting to both competitors and spectators. SAM's desire isn't to advance the state-of-the-art of aeromodeling, per se, other than to increase participation in the sport generally, or to reprove that which is already recorded in aeromodeling history books.

1969



The League of Silent Flight (LSF) provides collective identification for active Radio Control Soaring enthusiasts throughout the world and recognize individual proficiency and accomplishment through a defined program of standard performance criteria for RC model sailplanes.

The secondary purpose of the LSF is to foster and support all phases of sporting and competitive activity for RC model sailplanes; to encourage personal and collective advancement in knowledge of aerodynamics and related arts and sciences; and to promote the general interest in Soaring.

1973



The National Society of Radio Controlled Aerobatics' (NSRCA) objective is to promote the construction and competitive flying of RC Precision Aerobatic model airplanes. To aid, insofar as possible, the Academy of Model Aeronautics and other AMA activities, to further the advancement of model aircraft aerobatics in all of its phases.

The Precision Aerobatics Model Pilots Association (PAMPA) is a Special Interest Group (SIG) of the Academy of Model Aeronautics. It is an organization of approximately 800 members in 35 countries, whose common interest is model airplanes, specifically the kind that fly tethered on control lines, and perform stunts. The models are often very beautiful, and are carefully constructed from traditional materials such as balsa wood, silkspan, and dope. Top models are beautifully finished and extremely light and strong for their size.

The mission of PAMPA is to promote and improve Control Line Precision Aerobatics events.



1973

The Miniature Aircraft Combat Association (MACA) is a Control Line model aviation organization with a focus on CL Combat.



1973

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1977



The Navy Carrier Society (NCS) came into being in the early 1950's with the first Nats that including Carrier in 1952. This National Championship event was sponsored by the U. S. Navy.

Today the Carrier event is sponsored at the national level by the Navy Carrier Society, a group formed in 1977 to promote this activity.

The National Association of Scale Aeromodelers (NASA) aims to encourage, promote, and advance all phases of Scale aeromodeling, regardless of size, power, or mode of control.

NASA encourages the formation of Scale clubs, competition, training, the sharing of resources, and good relations with media and Academy of Model Aeronautics to further enhance the image of Scale aeromodeling.



1977

1980



The International Miniature Aerobatic Club (IMAC) is inspired by full-scale aerobatics. IMAC strives to fly Scale Aerobatic model aircraft in a competitive and realistic manner that is challenging for the contestants as well as interesting for spectators. At present, the IMAC standard is being used in more than 15 countries worldwide for Scale Aerobatics competition.

1983



The North American Speed Society (NASS) is the special interest group of Control Line Speed and is associated with the Academy of Model Aeronautics.

NASS helps formulate rules that promote the interest of the Speed fraternity as well as communicates your speed fliers' views and ideas to the AMA. The AMA has called upon the SIGs to run the Nats. NASS now runs the speed portion of the Nats.

The International Miniature Aircraft Association, Inc. (IMAA), was formed for the purpose of fostering and advancing the operation of large radio-controlled model aircraft in a setting where informality and safety of operations prevail. Additionally, IMAA was formed to create an atmosphere where pleasure, recreation, fellowship, and comingling can be fostered and found to exist among individuals enjoying the sport of building and flying large radio-controlled model aircraft.



1983



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1989



The Jet Pilots Organization (JPO) was founded to promote and advance jet modeling technology, and the safe recreation and general fellowship of this fast-growing segment of our model aviation. JPO officially represents USA jet modelers to our national organization insurer, the AMA. JPO strives to support the interests, goals, and concerns of jet pilots at all levels.

The Vintage Radio Control Society (VR/CS) is intended to preserve and promote the memory of Radio Control Aeromodeling activity as it was in the past.



1989

The International Radio Controlled Helicopter Association (IRCHA) was established as an organization by the pilots, for the pilots. IRCHA works to promote the continued growth of radio-controlled helicopters through education, representation, service, and special events. Radio-controlled helicopters are a dynamic, evolving segment of the AMA and as such IRCHA works closely with the AMA to foster growth and acceptance. Through these endeavors, IRCHA hopes to provide its members with the opportunity to enjoy the hobby, make many new friends, and expand their intellectual interests.



1989



1991

The Senior Pattern Association (SPA) promotes the competition flying of Radio Control Vintage Pattern aircraft. SPA's intention is to be casual, enjoyable, and to renew old friendships. There is no intent to advance the state of the art. The intent is to increase participation in the sport, and to establish an equitable and simple framework of rules and regulations for competition purposes.



1992

The National Competition Fun Fly Association (NCFFA) was formed to standardize tasks for radio-controlled competition fun-fly contests. Additionally, it was formed to create an atmosphere where pleasure, recreation, and fellowship can be fostered and found to exist among individuals competing in fun-flies.

The Scale Warbird Racing Association (SWRA) was formed for those individuals who are interested in the thrill, excitement, and nostalgia of racing radio-controlled model aircraft of piston-driven warbirds and replicas of the Unlimited "Reno" Racers.



1991

The National Control Line Racing Association (NCLRA) is an association for persons interested in the construction and operation of Control Line Racing aircraft.



1992



1994

The Unlimited Scale Racing Association (USRA) is an organization dedicated to the competitive sport of radio-controlled Giant Scale racing competition, capturing the thrill and excitement of this fast motor sport.

The USRA is the official sanctioning and rules body for the sport of Giant Scale Air Racing.



1998

The National Miniature Pylon Racing Association (NMPRA) promotes the general interests and welfare of all engaged in the construction and flying of radio-controlled model racing airplanes, and to aid insofar as possible the national program of the AMA.

The Radio Control Combat Association (RCCA) is a Special Interest Group of the AMA. The purpose of RCCA is to provide information and technical knowledge to model aviation enthusiasts who love the War Planes of World War II.

Members enjoy competition and a place to share information, views, and discussion with others who have similar interests.



1997

The World Miniature Warbird Association, Inc. (WMWA) is an organization dedicated to building and flying RC models built after the designs of the many aircraft used for combat and defense around the world. Model size, method of power, and construction are not an issue. WMWA is about friendship, about helping each other, and about introducing this fascinating hobby to young people.



1998

The History of Model Aviation

THE ACADEMY of Model Aeronautics (AMA), as an organization, has always been very interested in informing its members of current aeromodeling activities. In fact, so much so that the first issue of *Model Aviation* (MA) was printed and distributed before the organization even officially existed. Issue 1, Volume 1, was provided to those attending the 1936 National Aeromodeling Championships (Nats) before the first official meeting held at the end of the competition. For the next two decades, MA was provided to AMA Leader Members and subscribers, and in 1954, all AMA members began to receive MA as part of their membership benefits.

In 1966, in search of ways to reduce costs and increase members, combined with a unique opportunity offered by new owners of the magazine *American Aircraft Modeler* (AAM), the AMA council agreed to provide all members with a subscription to AAM rather than continue with its own separate publication. As part of this agreement, AMA news and events were included in a special section of the magazine. For the AMA it was hoped that by publishing a separate magazine, AMA members would still receive their AMA news, but also read exciting modeling feature articles. They also hoped that more modelers could be exposed to AMA news and events, and might therefore become members.

For AAM, because of the nature of its new ownership, the reduction in paying subscribers verses the rising numbers of AMA members paying only a fraction of the subscription rate, was not a concern. Because of the bimonthly nature of AAM during 1966, special MA issues would be mailed to chartered clubs and contest directors until AAM began monthly publication in 1967. From 1966 to 1975 membership increased from 16,000 to 52,000.

This arrangement worked well for nine years, until AAM announced in February 1975 that it was filing for bankruptcy. Suddenly the AMA was going to be without a way to communicate with its members. "AMA officers saw most members preferring to receive a magazine with well-rounded features at reasonable cost instead of a small newsletter—and authorized the revival of MA with 80 pages." (*Model Aviation*, July 1975, pg. 3.)

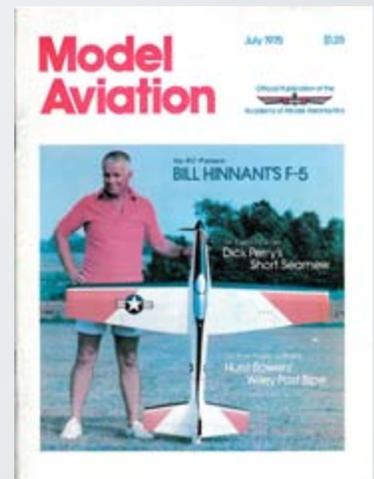
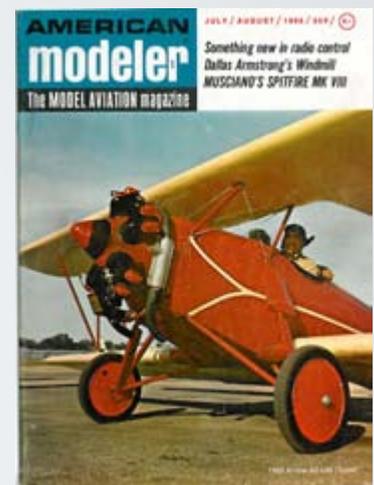
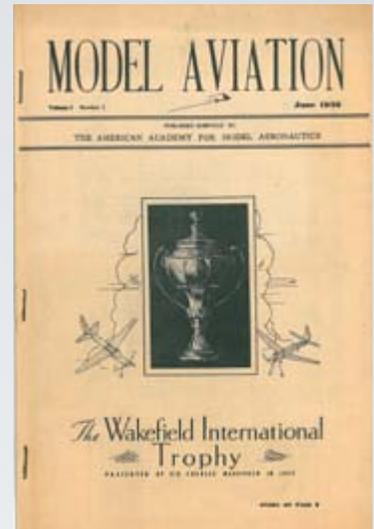
With only two months to prepare, advertisers were located and contributing editors and columnists were approached. As result of this hard work, the first issue of the new *Model Aviation* magazine was published in July of 1975.

Today, after 36 years, MA is the flagship of the AMA publication efforts, continuing to provide members with aeromodeling news, event coverage, new product announcements, and district reports.

Going forward, MA will continue to evolve to better serve our membership without losing sight of our core mission which is to inspire, inform, and instruct enthusiasts who share a passion for aeromodeling. MA

—Jay Smith
Model Aviation Editor

—Michael Smith
National Model Aviation Museum Director



Model Aviation Editors 1936 to Current

1936: Lt. H.W. Alden

1937-1940: Al Lewis (*Model Aviation* News Editor)

1941-1945: Unknown editor

1946: Al Lewis

1947: Valentine Luce

1948-April 1951: Unknown editor

May/June 1951 – April 1959: Carl Wheeley

May 1959- September 1961: Clifford Allum

October 1961-June 1966: Bill Winter

July 1966-June 1975: Unknown during the years AMA had a *Model Aviation* news section published in *American Aircraft Modeler/Aircraft Modeler* (possibly Bill Winter)

July 1975-September 1980: Bill Winter

October 1980-November 1990: Carl Wheeley

December 1990-April 1992: Ross McMullen (Executive Editor)

April 1992-June 1992: Terry Rossiter (Managing Editor)

July 1992-March 1993: Ross McMullen (Managing Editor)

April 1993-May 1993: Nancy Green (Managing Editor)

June 1993-October 2000: Jim Haught

January 2001-December 2007: Bob Hunt

January 2008-April 2011: Michael Ramsey

May 2011-current: Jay Smith

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Gil in his workshop.

HE WAS KNOWN affectionately by his aeromodeling friends as “Mr. Second Place.” A tenacious competitor in CL Combat, Gil Reedy of Mechanicsburg, Pennsylvania, co-founder of the Harrisburg Aeromodeling Society, had many local competition wins throughout his long career, but never first in the Nats. He loved all types of CL flying, but Gil was most avid about Combat.

Gil Reedy has passed away but his legacy lives on among the many AMA friends he has left behind, including his longtime combatant, Phil Cartier, who did win the CL Combat Nats on more than one occasion in an equally lengthy aeromodeling career.

“Gil was a real competitor,” recalls Phil. “He was a great guy and a real gentleman, but when he was in the circle he was the Red Baron. I think we went to 20 out-of-state contests every year for more than 20 years.”

The Academy received a generous gift from Gil’s estate. The photo at left shows Gil with one of his last workshop creations. It is one of the many airplanes that gave much pleasure to him and another good friend and flying partner, Phil Spillman.

“The small P-40 was a trip down memory lane for Gil,” says Phil. “It was a Monogram Speedi-Built model that many of us built when we were in fifth or sixth grade. These didn’t fly well, but were still really neat to us!”

Gil was recognized in 2008 at the Brodak Annual Fly In, now the world’s largest CL model competition with the Spirit of the Sport Award for “for individuals who both exemplify and promote control line.”

Although Gil is gone, his legacy remains in the hearts of many friends. AMA is very pleased that he thought of the Academy with a generous gift. *MA*

—Chris Brooks, APR
Director of Public Relations



Gil Reedy

Gil testing one of his workshop CL creations.

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Make sure your legacy is fully intact. We can help. Just call us at 1-800-I-FLY-AMA (435-9262) or write to development@modelaircraft.org. There are many ways to help the Academy serve its members, students and communities. Renewal notices to members include many options for additional support, including funds for Site Development, Scholarships, Member Helping Member, the Museum Patron Program and others.

You can also help AMA and future generations with a donation and purchase of a brick in the AMA Walk of Fame. The bricks are suitable for corporate sponsorships, family and individual contributions, special memorials, clubs and civic organizations. For a donation of \$100 your presence on the Walk of Fame is a 4x8-inch custom-engraved paving brick with the AMA logo, and up to two lines of copy. A “Golden Wings” brick is available for \$500, and an 8x8-inch black granite brick with five lines of copy is available for a donation of \$1,000.



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Investing in the Future

WHEN THE ACADEMY of Model Aeronautics (AMA) was founded in 1936, the name was chosen by the organization to acknowledge that learning about model building and flying was an important part of a young person's education.

During the so-called "Golden Age of Aviation," when the nation's youth closely followed the achievements of Charles Lindbergh and Amelia Earhart, building small-scale aircraft for competition in local, regional, and national flying events was viewed as a logical part of preparation for higher education in a variety of careers.

The "Academy" in the organization's name is no less relevant today because a major focus of the sport and hobby of aeromodeling is lifelong learning, whether a member is young or simply young at heart.

Model aviation has changed much in the last half-century. The revolution in micro technology now makes it possible for newcomers to the sport and hobby of model aviation to fly battery-powered, electric-powered Radio Control, Free Flight, and Control Line models literally in their own backyards. The recent dramatic increase in public access provides an opportunity

for young people to actively engage in aviation without waiting to reach minimum-age requirements imposed by the FAA or incurring the expense involved in full-scale aviation. They can do so immediately at home, in their classrooms, in schoolyards and in local parks.

With the help of more than 140,000 AMA members in 2,400 chartered clubs, newcomers have the opportunity to become members in informal education "communities of learners," to acquire new skills in electronics, mechanical engineering, and aerodynamics, extending their reach to new horizons of achievement. **MA**



AMA is engaging classrooms across the country.

—Bill Pritchett
Director of Education



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